

Abstract

It is taught that two reflective parabolic or paraboloidal surfaces of different scales whose axes point in opposite directions but which share a common focal point can be used as an image forming telescope. If only a portion of a parabolic or paraboloidal sliced along the optical axis is used as the surfaces, then they can be configured so that light rays strike the surfaces at such angles as to be totally internally reflected. Thus a solid prism can be constructed that serves as telescopic or non-imaging collector of light with no loss of energy due to internal reflection or refraction. Since this system does not depend on an optically precise entry surface, it may be useful in fiber optic and solar power applications.